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Executable Paper Grand Challenge Workshop

Ann Gabriel[a], Rebecca Capone[a]*

[a]*Elsevier Inc, New York, NY, USA*

Abstract

The Workshop for the Executable Paper Grand Challenge, taking place at the 2011 International Conference on Computational Science, is a platform for Grand Challenge contestants and finalists to present their concept of an Executable Paper, a method by which data intensive research is better represented in a scholarly journal article. The Executable Paper Grand Challenge is designed to enhance how scientific information is used and communicated in computer- and computational sciences.

1. About the Challenge:

Data sets, code, and software are but some of the crucial elements in data intensive research; yet, these elements are noticeably absent when the research is recorded and preserved in perpetuity by way of a scholarly journal article. Further, most researchers do not deposit data related to their research article; and if they do so, it is often deposited on their personal or institutional websites, lacking consistency, reliable dissemination, discoverability, proper association (to the research article), documentation, validation, and preservation. To address all these concerns and to accommodate the ever increasing body of data intensive science, considerable adaptations to the existing journal article are fundamental to accommodating the need to disseminate, validate, and archive research data, as well as a method to allow this data, in some way or form, to be validated, citable, tractable, and executable. Professionals, instructors, students, or enthusiasts in the field of computer science were invited to put forth ideas on how to improve representation of data-intensive research in a scholarly article.

* Corresponding author
E-mail address: r.capone@elsevier.com

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Submissions to the Executable Paper Grand Challenge are evaluated using the following criteria, by an international panel of judges:

- Project quality: The following factors will be evaluated: whether the idea and objective are clearly defined and the extent to which the issues described in the About the Challenge section of this website are addressed.

- Usefulness to the user as well as scientific novelty are also critical considerations.

- Innovation/vision: Evaluation will be focused on the level of innovation compared with the current state-of-the-art in data and software publishing and access.

- Scope: An important criterion is whether the proposal is applicable to a small or large subgroup of papers in Computer Sciences at large. A brilliant solution for a small domain might be less useful, in the end, than an incremental step in e.g. metadata standards that is applicable over a broader range of areas.

- Feasibility: The project will be evaluated in terms of the possibility and ease of implementing the proposed solution within a publishing workflow, and the scope and distribution of required software and hardware components. Equally important is whether the executable component can be gotten to run on the platform provided, and the capability to scale up the proposal.

2. The Workshop

From the 71 abstract submissions to the Grand Challenge, nine finalists were selected to build a prototype of their idea and present the prototype to the panel of judges during the Executable Paper Grand Challenge workshop. In addition to the finalists, 15 contestants were invited to expand their abstracts and present their paper during the Executable Paper Grand Challenge workshop as well. All who presented at the workshop are also invited to submit an expanded paper to a special issue published in the journal *Future Generation Computer Systems.*

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